UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/216,378	12/18/1998	RIX S. CHAN	450.250US1	9856

24333 7590 07/13/2006

GATEWAY, INC.
ATTN: Patent Attorney
610 GATEWAY DRIVE
MAIL DROP Y-04
N. SIOUX CITY, SD 57049

EXAMINER	
LAO, LUN S	

ART UNIT	PAPER NUMBER
2615	

DATE MAILED: 07/13/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	09/216,378	CHAN ET AL.	
	Examiner	Art Unit	
	Lun-See Lao	2615	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *17 April 2006*.

2a)☒ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-38* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-5,7-27 and 28-38* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☐ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

ETAILED ACTION

Introduction

1. This action responds to amendment filed on 04-17-2006. Claims 6 and 28 have been cancelled and claims 1-5, 7-27 and 29-38 are pending.

Claim Rejections - 35 USC § 103

2. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

3. Claims 1-5, 7-27 and 29-38, are rejected under 35 U.S.C. 103(a) as being unpatentable over Lambrecht (US PAT. 6,259,792) in view of McIntosh (US PAT. 6,278,786).

Consider claim 1, Lambrecht teaches a personal computer comprising (fig.1, col. 2, lines 9-35):

a microphone (fig.2, 108) for detecting ambient noise (col. 3, lines 48-61);

a noise cancellation module (speaker 110) coupled to (fig.1) the microphone that generates a noise cancellation signal responsive to the detected ambient noise (col. 2, lines 9-25).

Lambrecht further teaches mixing the noise cancellation signal with an audio signal provided from a desired source for provision to a standard headphone compatible

audio output connection (output port to headphone) to reduce headphone noise (computer 154 samples, outputs and combines, col. 2, lines 55-64).

While Lambrecht does not explicitly teach that the microphone is of a built-in type, Lambrecht teaches the microphone is physically located with the speaker, which in tern is a conventional speaker (col. 3, lines 48-53). One of ordinary skill in the art would have realized that for the PC (notebook computer 154) as shown in figure 1, the speaker would have been built into the PC / notebook computer. Therefore, the microphone would have been built into the PC / notebook computer, to be physically located with the speaker.

Lambrecht does not teach the mixing of the noise cancellation signal with an audio signal is provided by a digital signal processor.

McIntosh teaches noise cancellation, wherein a digital signal processor (DSP) for mixing the noise cancellation signal with an audio signal (AUDIO L, R) provided from a desired source for provision to a standard headphone compatible audio output connection (12) to reduce headphone noise (see col.3 line 24-col.4 line 55).

Therefore, it would have been obvious to one of ordinary skill in the art at the time invention was made to include a DSP as taught by McIntosh in the system of Lambrecht to perform the mixing. One of ordinary skill in the art would have been motivated to do so because this would have maximized the effectiveness of the noise cancellation under all conditions (McIntosh, col. 4, line 56 – col. 5, line 7).

Consider claims 2-3, Lambrecht discloses that the personal computer of further comprising an optical disc drive for providing the audio signal (see col.2 lines 9-35 and

col.3 lines35-42) and the noise reduction scheme of the noise cancellation module comprises a software program running on a processor (see col.5 line 40-col.6 line 25).

Consider claim 4, Lambercht discloses that the personal computer wherein the microprocessor is the central processing unit for the computer system (see col.3 lines 10-22).

Consider claim 5, McIntosh discloses that the noise reduction scheme includes the digital signal processor (see fig. 4, dsp) is located on a sound board (see col.3 line 24-col.4 line 55).

Consider claim 7, Lambrecht discloses that the personal computer of the audio output connection is compatible with a standard set of headphones (see fig.2 #108 and col.3 lines 3-12) and the computer system is a mobile computer (see fig.1).

Consider claim 8, it is a method claim of claim 1 and thus note claim 1 for discussion.

Consider claim 9-12, Lambrecht teaches that the method of reducing ambient noise further comprising converting the detected ambient noise to an electrical signal (see col.3 line 45-col.4 line 25); detecting the ambient noise is performed using a built-in microphone within the mobile computer system (see fig.1 # 154 and col.3 lines 2-30) and the generation of the noise cancellation signal is done when the optical disc drive is active (see col.2 lines 9-35 and col.5 line 20-col.6 line 47); generation of the noise cancellation signal is initiated manually via a software interface (see col.2 lines 9-35 and col.5 line 40-col. line 50).

Consider claim 13, it is a computer program product claim of the method claim 8, and thus note claim 8 for discussion. The operation of Lambrecht as modified by McIntosh is under the control of computer software (Lambrecht, col. 5, starting from line 60) (McIntosh, control algorithm implemented by DSP, col. 4, lines 7-18; software control of DSP, col. 5, lines 57-59; software of the headset system, col. 6, lines 23-26). Storing instructions in a machine/computer readable medium would have been obvious for the purpose of portability.

Consider claims 14-15, Lambrecht teaches that the machine readable medium of generating a noise cancellation signal is performed automatically when the optical disc drive is active (see col.3 line 20-col.4 line 56) and; of generating a noise cancellation signal is activated through a software interface (such as, Microsoft operation software and see col.4 lines 5-55 and col. 5 line 60-67).

Regarding claim 16, it is covered by claim 1 except for housing, microprocessor, memory and storage device. Lambrecht further teaches housing (fig.1, computer 154), microprocessor (fig.2, 102) inherently mounted on the housing, memory coupled to the microprocessor (fig.2, 112) and storage device coupled to the microprocessor (hard disc, col. 3, lines 36-41).

Consider claims 17-18, Lambrecht teaches that the personal computer of further comprising an integrated display device and computer comprises a mobile computer system having an integrated source of power (see fig.1 #154).

Consider claims 19-20, Lambrecht teaches that the personal computer of the noise cancellation module is part of the microprocessor (see col.6 lines 5-25) and the

personal computer comprises a mobile computer system and the noise cancellation module is provided by the microprocessor (see col.6 lines 5-50).

Consider claims 21,23, McIntosh discloses that the audio source comprises a compact disc playing game or music sounds; and the audio from the compact disk comprises music (see fig.8 and see col. 5 line 29-col. 6 line 25).

Consider claim 22, McIntosh teaches that the noise cancellation signal is mixed with the audio signal (see fig.4 (AUDIO, L and R)) to cancel ambient noise such that the audio signal is audible through a speaker (see fig.4 (12)) couple to the audio output connection (see col.3 line 23-col.4 line 55).

Consider claim 24, it is covered by claim 1 except for the personal computer being a mobile computer, noise cancellation module being a software module, and profile for compensating for keyboard key clicks detected by the microphone.

Lambrecht as modified by McIntosh further teaches the personal computer being a mobile computer (Lambrecht, 154, fig. 2) and noise cancellation module being a software module (McIntosh, control algorithm implemented by DSP, col. 4, lines 7-18; software control of DSP, col. 5, lines 57-59). Further, noise produced by keyboard key clicks is a typical ambient noise in a space wherein multiple computer users (such as 152 of Lambrecht) are operating. Therefore, it would have been obvious to include such noise, and its profile / characteristics, into the ambient noise to be compensated in the system of Lambrecht as modified by McIntosh. Note discussion of claim 1 for a motivation to combine.

Consider claims 25-28, Lambrecht teaches that the mobile computer of the audio output connection comprises an analog output port (col.5 lines 10-25); and a digital to analog converter coupled between the digital signal processor and analog output port(see fig.2); and the noise cancellation signal is generated when a source of audio output is activated (see col.1 line 20-col.2 line5); and microphone is a built-in microphone of said personal computer (see col.3 lines 3-15).

Consider claims 29-30, Lambrecht teaches that the personal computer of noise cancellation module generates the noise cancellation signal based on said ambient noise, said noise cancellation signal being generated in a format suitable to reduce headphone noise in the standard set (see col1 line 20-col.2 line 35); but, Lambrecht does not clearly teach headphones connected via the audio output connection.

However, McIntosh teach the noise cancellation signal with an audio signal provided to a standard headphone (see fig.4, 12) compatible audio output connection to reduce headphone noise (12 and see col.3 line 23-col.4 line 55).

Therefore, it would have been obvious to one of ordinary skill in the art at the time invention was made to combine the teaching of McIntosh into Lambrecht. Note discussion of claim 1 for a motivation to combine.

Consider claims 31 and 33, Lambrecht teaches that the noise cancellation signal is generated based on the detected ambient noise in a format suitable to reduce headphone noise in the standard set of headphones (see figs 1-2 and col.2 line 55-col.3

line 61); but Lambrecht does not clearly teach that the headphones connected via the audio output connection.

However, McIntosh teaches that the noise cancellation signal is generated based on the detected ambient noise in a format suitable to reduce headphone (see fig.4, 12) noise in the standard set of headphones connected via the audio output connection (12 and see col.3 line 23-col.4 line 55). Note discussion of claim 1 for a motivation to combine.

Consider claims 35 and 37, Lambrecht teaches that the personal computer of the noise cancellation module generates the noise cancellation signal based on said ambient noise (see figs 1-2 and see col. 2 line 55-col. 3 line 53), but Lambrecht does not clearly teach the noise cancellation signal being generated in a format suitable to reduce headphone noise in the standard set of the headphones connected via the audio output connection.

However, McIntosh teaches that the noise cancellation module generates the noise cancellation signal based on said ambient noise, said noise cancellation signal being generated in a format suitable to reduce headphone (see fig.4, 12) noise in the standard set of headphones connected via the audio output (audio land r) connection (12 and see col.3 line 23-col.4 line 55).

Therefore, it would have been obvious to one of ordinary skill in the art at the time invention was made to combine the teaching of McIntosh into Lambrecht. Note discussion of claim 1 for a motivation to combine.

Consider claims 32, 34, 36 and 38 McIntosh teaches that the headphone noise comes from a some source as said ambient noise (see fig.4. and see col.3 line 23-col.4 line 55).

4. Claims 16-20, 24-27 and 35-38 are rejected under 35 U.S.C. 103(a) as being unpatentable over Eatwell (US PAT. 5,828,768) in view of McIntosh (US PAT. 6,278,786).

Consider claim 16, Eatwell teaches that a personal computer comprising:

a housing (see fig. 9)

a microprocessor inherently (because, the computer includes it) mounted on the housing.

memory (see fig. 15, (109) coupled to the microprocessor (main processor),

a storage device (110) coupled to the microprocessor;

a microphone (see fig.9, (68)) built into the housing for inherently detecting noise ambient to the housing (see col. 5 lines 55-61);

a noise cancellation module (see fig.16) coupled to the microphone (112) that generates a noise cancellation signal responsive to the detected ambient noise (see col. 7 lines 7-18); but Eatwell fails to disclose a digital signal processor for mixing the noise cancellation signal with an audio signal provided from a desired source for provision to a standard headset compatible audio output connection to reduce headphone noise.

However, McIntosh discloses a digital signal processor (see fig.4, (DSP)) for mixing the noise cancellation signal with an audio signal (such as (AUDIO, L AND R))

provided from a desired source for provision to a standard headset compatible audio output connection to reduce headphone noise (see col.3 line 23-col.4 line 55).

Therefore, it would have been obvious to one of ordinary skill in the art at the time invention was made to combine the teaching of McIntosh into Lambrecht to provide not only active control of the analog cancellation loop gain to maximize the effectiveness of the broadband analog cancellation but also uses the adaptive feedback filter/algorithm to substantially reduce at least the loudest tonal noises penetrating the earcup (such tonal noises being engine and propeller noises, and harmonic vibrations of fuselage components).

Consider claims 17-18, Eatwell teaches that a display device integrated into the display device (see fig.9 and see col. 5 line 55-61) and personal computer comprises a mobile çomputer system having a source of power integrated into the housing (see figs 9 and 15 and col. 6 line 54-col. 7 line 9).

Consider claims 19-20, Eatwell teaches that the personal computer of the noise cancellation module is part of the microprocessor (see fig. 16, (DSP) and see col.7 lines 10-18) and the personal computer comprises a mobile computer system and the noise cancellation module is provided by the microprocessor (see fig. 16, (DSP) and see col.7 lines 10-18).

Consider claim 35, Eatwell teaches that the personal computer of the noise cancellation module generates the noise cancellation signal based on said ambient noise (see figs 9 and 16 and see col. 7 lines 10-18), but Eatwell does not clearly teach

the noise cancellation signal being generated in a format suitable to reduce headphone noise in the standard set of the headphones connected via the audio output connection.

However, McIntosh teaches that the noise cancellation module generates the noise cancellation signal based on said ambient noise, said noise cancellation signal being generated in a format suitable to reduce headphone (see fig.4, 12) noise in the standard set of headphones connected via the audio output (audio land r) connection (12 and see col.3 line 23-col.4 line 55).

Therefore, it would have been obvious to one of ordinary skill in the art at the time invention was made to combine the teaching of McIntosh into Eatwell to provide not only active control of the analog cancellation loop gain to maximize the effectiveness of the broadband analog cancellation but also uses the adaptive feedback filter/algorithm to substantially reduce at least the loudest tonal noises penetrating the earcup (such tonal noises being engine and propeller noises, and harmonic vibrations of fuselage components).

Consider claim 24 Eatwell teaches a mobile computer comprising:

a microphone (see fig.5, (53-54)) integrated into the mobile computer for detecting ambient noise (see col.5 lines 20-40 and col. 6 line 54-col.7 line 9).

a noise cancellation software (voice recognition software resides) module coupled to the microphone (see fig.15, 102) that generates a noise cancellation signal responsive to the detected ambient noise, and inherently (because, the voice recognition software resides) having a profile for compensating for keyboard key clicks (such as, hard disk and floppy disk are based on background noise) detected by the microphone (see fig. 5

(53-54) and col.5 line 20-40), but Eatwell fails to teach that a digital signal processor for mixing the noise cancellation signal with an audio signal provided from a desired source for provision to an audio output connection for a standard headset.

However, McIntosh teaches that a digital signal processor (see fig.4, (DSP)) for mixing the noise cancellation signal with an audio signal (AUDIO, L and R)) provided from a desired source for provision to an audio output connection for a standard headset (12 and see col.3 line 23-col.4 line 55).

Therefore, it would have been obvious to one of ordinary skill in the art at the time invention was made to combine the teaching of McIntosh into Eatwell to provide not only active control of the analog cancellation loop gain to maximize the effectiveness of the broadband analog cancellation but also uses the adaptive feedback filter/algorithm to substantially reduce at least the loudest tonal noises penetrating the earcup (such tonal noises being engine and propeller noises, and harmonic vibrations of fuselage components).

Consider claims 25-27, Eatwell teaches that the mobile computer of the audio output connection comprises an analog output port (in the sound card and see col.6 lines 25-67); and a digital to analog converter coupled between the digital signal processor and analog output port (in the sound card and see col.6 lines 25-67); and the noise cancellation signal is generated when a source of audio output is activated (see col.6 line 53-col.7 line45).

Consider claim 37, Eatwell teaches that the personal computer of claim 16 wherein said noise cancellation module generates the noise cancellation signal based on said ambient noise, said noise cancellation signal being generated in a format suitable to reduce noise in the computer (see figs. 13, 15 and col.6 line 25-col. 7 line18); but Eatwell does not clearly teach to reduce headphone noise in the standard set of headphones connected via the audio output connection.

However, McIntosh teaches that the noise cancellation module generates the noise cancellation signal based on said ambient noise, said noise cancellation signal being generated in a format suitable to reduce headphone noise in the standard set of headphones (see fig.4, (12)) connected via the audio output connection (audio, l and r and see col.3 line 23-col.4 line 55).

Therefore, it would have been obvious to one of ordinary skill in the art at the time invention was made to combine the teaching of McIntosh into Lambrecht to provide not only active control of the analog cancellation loop gain to maximize the effectiveness of the broadband analog cancellation but also uses the adaptive feedback filter/algorithm to substantially reduce at least the loudest tonal noises penetrating the earcup (such tonal noises being engine and propeller noises, and harmonic vibrations of fuselage components).

Consider claims 36 and 38, McIntosh teaches that the headphone noise comes from a some source as said ambient noise (see fig.4. and see col.3 line 23-col.4 line 55).

Response to Arguments

5. Applicant's arguments filed 4-17-2006 have been fully considered but they are not persuasive.

Regarding applicant arguments concerning the motivation to combine Lambrecht and McIntosh (remarks, pages 10-12), a motivation to combine is discussed in detail in the rejection of claim 1.

Regarding applicant argument of McIntosh not teaching the built-in microphone (remarks, page 13), this is met by Lambrecht. As discussed in the rejection of claim 1, while Lambrecht does not explicitly teach that the microphone is of a built-in type, Lambrecht teaches *the microphone is physically located with the speaker*, and the speaker in tern is a conventional speaker (col. 3, lines 48-53). One of ordinary skill in the art would realize that for the PC (notebook computer 154) as shown in figure 1, the speaker would be built into the PC / notebook computer. In other words, the microphone would be built into the PC / notebook computer, to be physically located with the speaker.

Applicant argued that McIntosh does not teach a standard headphone compatible audio output connection (remarks, page 13). The examiner's position is that the claim language (claims 1, 8, 13, 16 and 24) requires *audio output connection* which is compatible with a standard headphone, which is met by Lambrecht who teaches the output port to the user's headphone, which is certainly compatible with any standard headphone. Noise cancellation processing is performed before output (figs. 2-4).

Regarding applicant's argument that McIntosh does not teach detecting ambient noise (remarks, page 14), McIntosh teaches detecting ambient noise (col. 2, lines 60-61), which is compensated for.

Conclusion

6. THIS ACTION IS MADE FINAL. Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

7. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

8. Any response to this action should be mailed to:

Mail Stop ____(explanation, e.g., Amendment or After-final, etc.)

Commissioner for Patents
P.O. Box 1450

Alexandria, VA 22313-1450
Facsimile responses should be faxed to:
(571) 273-8300
Hand-delivered responses should be brought to:
Customer Service Window
Randolph Building
401 Dulany Street
Alexandria, VA 22314

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Lao,Lun-See whose telephone number is (571) 272-7501 The examiner can normally be reached on Monday-Friday from 8:00 to 5:30.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Chin Vivian, can be reached on (571) 272-7848.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the Technology Center 2600 whose telephone number is (571) 272-2600.

Lao,Lun-See L.S.
Patent Examiner
US Patent and Trademark Office
Crystal Park 2
571-272-7501

07-07-2006

VIVIAN CHIN
SUPERVISORY PATENT EXAMINER
TECHNOLOGY CENTER 2600

7/10/06